

REMARKS

Reconsideration and removal of the grounds for rejection are respectfully requested. Claims 29-36, 39, 41-46 and 48-52 were in the application. Claims 29-33, 36, 41-43, 45, 50-52 are presently amended.

To clarify the applicants' invention, the claims have been amended throughout to substitute the term "deactivatable impeding means" for "current dependant impeding means". Support for this change is found in the specification, p.24, l. 1-10. The impeding means consequently act as an internal switch, being activated ("on") during a gassing portion of the charging cycle, and being deactivated ("off") during charging below the gassing charge and during discharge, which provides significant benefits to battery performance and life. It is believed that this language more properly describes the applicants' invention.

Claim 29, 39, 41-44, 46 and 48-52 were rejected as being anticipated by JP 10-302 785 A ("the JP '785 Patent").

Claim 29 requires "deactivatable impeding means... , for forming a barrier for impeding the gassing charge". These means are further defined by their activation/deactivation, the means acting as a switch that is "activated by the charging portion corresponding to the gassing charge and deactivated below the gassing charge." When activated, these means impede the gassing charge to limit gas generation. When deactivated, these means have substantially no charge limiting effect, and have no effect during the discharge cycle. This is critical. The primary purpose of a battery is to provide power for an end use, and impeding effects during the discharge cycle would hamper that use.

The switching function is related to the structure of the barrier. Not every barrier will provide deactivatable impeding means, and specifically, deactivatable impeding means are not found in the JP '785 Patent.

Enclosed with this amendment is a declaration by the inventor. Mr. Fitter has conducted comparative testing to prove the differences with the JP '785 Patent. The results are found in paragraphs 15 and 16, repeated here:

"15. It can be seen from graph 1 that the stearic acid provides series resistance, however, contrary to the examiners' contention, the stearic acid effect is always present, and is not activated/deactivated according to the state of charge of the battery, that is, stearic acid does not provide the structure necessary to provide the deactivatable impeding means of my invention. The effect created, whether by a film

or other barrier, remains activated, and is permanent, and so there is no on/off switching effect. The result is that, while providing an increase in the hydrogen overpotential, as evidenced by the rising potential of the stearic acid curve from about 11 hours onward, this also provides a rising potential throughout the bulk of the charging, making the charging process less efficient and causing an increase in ohmic losses in the battery, with an increase in heating. Also, graph 2 shows an increase in resistance during discharging, causing further heating losses and reducing the battery ampere-hour rating, as seen from the curves in graph 2.

16. This test confirms the serious disadvantages inherent in the JP '785 Patent, disadvantages specifically overcome by my invention, by proving that JP '785 Patent does not provide the structure necessary to provide the deactivatable impeding means as required by my claims."

The testing confirmed that using the JP '785 fatty acid "coating" on the face of the negative electrode does not provide the structural engagement of the present invention, illustrated by the head and tail attachment shown in Fig. 6. The difference in function and advantages is made quite clear by the unexpected improvement in performance obtained using the present invention. Mr. Fitter previously explained the distinction in orientation as important to the performance improvement, and provided independent documentary support, which the examiner cannot refute. Even using the same compound, a higher concentration causes an edgewise orientation and the barrier loses its "deactivatable" characteristic.

The claimed barrier must be found in the cited art to anticipate, not just any barrier. The barrier of the claim, formed by "deactivatable" impeding means, is not found in JP '785, and the rejection over JP '785 as being anticipated should be withdrawn.

Claims 29-31, 34-36, 42-49 and 51-52 were rejected as being anticipated by the JP '728 Patent. In his comments, the examiner disregarded the previous test conducted by Mr. Fitter, because Mr. Fitter used 1% , while the reference used 3%, dodecyldimethyl benzyl ammonium chloride. Mr. Fitter has now repeated the experiment, with 3% dodecyldimethyl benzyl ammonium chloride. The results are described in his declaration, paragraphs 18-21. The testing confirmed that a test cell so dosed suffered a serious loss of performance during the discharge cycle. The JP '728 Patent does not incorporate the deactivatable impeding means of the present invention.

For a means plus function element to be anticipated, the prior art element must perform the identical function specified in the claim in substantially the same way and produce substantially the same result. Remco Sales Inc. V. Control Papers Co. 208 F.3d 1352 (Fed. Cir.

2000). As the identical function is not found, these claims cannot be anticipated by the JP '728 Patent.

Claims 29-33, 36, 39, 42-46, 48-49 and 51-52 were provisionally rejected for obviousness type double patenting over claims 11, 15 and 16 of U.S. Pub. No. 2002/0038765. A terminal disclaimer is enclosed herewith so as to overcome the double patenting rejection, over what is now granted U.S. Patent no. 6,828,681, which issued on November 23, 2004.

Based on the above amendment and remarks, favorable consideration and allowance of the application is respectfully requested. However should the examiner believe that direct contact with the applicant's attorney would advance the prosecution of the application, the examiner is invited to telephone the undersigned at the number given below.

Respectfully submitted,



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